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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,741	09/22/2005	Radu Catalin Surdeanu	NL03 0347 US1	6084

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EXAMINER	
LIN, JOHN	

ART UNIT	PAPER NUMBER
2815	

NOTIFICATION DATE	DELIVERY MODE
03/04/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 10/550,741	**Applicant(s)** SURDEANU ET AL.	
	Examiner JOHN LIN	**Art Unit** 2815	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 09 February 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: *See Continuation Sheet*. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *6-14 and 17-24*.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/J. L./
Examiner, Art Unit 2815

/Matthew E Warren/
Primary Examiner, Art Unit 2815

Continuation of 3. NOTE: The proposed amendment raises new issues that requires further consideration and/or search.

Continuation of 11. does NOT place the application in condition for allowance because:
Applicant request that the finality of the Office Action dated December 11, 2009 be withdrawn because the Office Action asserts a new ground of rejection and applicant did not submit an amendment to necessitate the rejection.
Examiner notes that applicant amended independent claims 6 and 24 in the response dated May 19, 2009, which necessitated the final rejection. The finality of the Office Action dated December 11, 2009 will therefore not be withdrawn.

Applicant contends the combination of U.S. Patent 6,667,525, granted to "Rhee," and U.S. PGPUB 2001/0039107, granted to "Suguro." Applicant contends that metallic and polysilicon materials exhibit different semiconductor properties that cannot be combined as proposed without extensive modifications.
Examiner notes that Suguro discloses a gate electrode with a second layer (3') having a grain size at least twice as large as the grain size of a first layer to reduce the variations in threshold voltage (Fig. 3; paragraphs [0081]-[0096]). A person of ordinary skill in the art at the time of the invention would be motivated by the disclosure of Suguro to combine it with Rhee because of the advantage of having the difference in grain sizes.

Applicant contends the proposed combination of Rhee and Suguro does not provide a clearly-articulated explanation as to how Rhee could or would operate as modified.
Examiner notes that Rhee would operated the same as modified because Rhee already discloses that the second layer (24) has a grain size greater that the first layer (23) (Fig. 3; column 5, lines 5-10).

Applicant contends that the Office Action does not provide any support or reasoning for the conclusion that grain size of polysilicon will exhibit semiconductor properties as grain sizes used in connection with metallic compounds.
Examiner notes the combination of Rhee and Suguro as applied in the Office Action does not propose to replace the semiconductor gate of Rhee with the metal gate of Suguro, rather that since Suguro discloses that a gate electrode with an upper layer (second layer) that has a grain size that is twice as large as a lower layer (first layer) (Fig. 3; column 5, lines 5-10), a person of ordinary skill in the art would be motivated to try to modify Rhee to have the gate electrode of semiconductive material have an upper layer (second layer) have a grain size that is at least twice as large as a lower layer (first layer).

Applicant contends replacing the random crystalline structure upper layer 24 of Rhee with a layer of amorphous silicon will render Rhee unsatisfactory for restraining the diffusion of Ge through the grain boundary.
Examiner notes that Rhee discloses that because the grain boundary of the lower polySi-Ge layer 23 is not formed continuously with the grain boundary of the upper poly-Si 24, the diffusion of Ge is restrained (column 5, lines 13-16). Replacing poly-Si layer 24 with an amorphous layer would not allow Ge to diffuse to the upper layer because the amorphous layer would not form continuous grain boundaries with the layer 23.

Applicant contends the relationship between the doping profile and the resulting depletion region is not a result affecting parameter, that in order to be a resulting effecting variable, a parameter must be adjustable in a workable range through routine experimentation to achieve a recognized result. Applicant further contends that the claimed abruptness of the doping level is not a result effective variable because it is not achievable through routine experimentation using methods of semiconductor construction known in the prior art.
Examiner notes that U.S. Patent 6,222,251, granted to "Holloway," discloses the doping level of a gate electrode with a graded doping profile affects the depletion region of the gate electrode (column 1, line 56 - column 2, line 3 and column 5, line 30 - column 6, line 8). Adjusting the doping levels of a gate electrode having a doped profile affects the depletion region of the gate electrode, thus the doping profile is a resulting affecting variable.